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L1: Entry 1 of 1 File: DWPI Jun 15, 1999

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DERWENT-WEEK: 200059

TITLE: Anticancer immunoactive polysaccharide separated from Phellinus linteus and process of making it - NoAbstract

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C 12 P 19 00

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(전 3 면)

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⑤4 펠리누스 린터우스(Phellinus linteus 로부터 분리된 항암 면역활성 다당류 및 이의 제조 방법

⑤요 약

본 발명은 펠리누스, 린테우스 KCTC 0173BP의 균사체로부터 분리된 분자량 9,000 내지 16,000, 또는 153,000 달톤의 항암 면역활성 다당류, 상기 균주의 균사체로부터 열수 추출, 에탄올 침출 및 음이온 교환 크로마토그래피를 통해 상기 다당류를 분리하는 방법 및 상기 다당류를 함유함을 특징으로 하는 항암제 조성물에 관한 것이다.

등록청구의 범위

1. 펠리누스 린테우스(Phellinus linteus) KCTC 0173BP 균주의 균사체로부터 분리정제된 항암 면역활성 다당류.

2. 제1항에 있어서, 분자량이 5,000 내지 16,000달톤인 항암 면역활성 다당류.

3. 제1항에 있어서, 분자량이 153,000달톤인 항암 면역활성 다당류.

4. 제1항에 있어서, 상기 다당류의 당성분이 5 내지 55몰%의 글루코즈, 5 내지 30몰%의 갈락토즈, 10 내지 50몰%의 만노즈, 1 내지 25몰%의 자이로즈 및 5 내지 25몰%의 아라비노즈로 이루어진 항암 면역활성 다당류.

5. 펠리누스 린테우스 KCTC 0173BP 균주의 균사체를 열수 추출하고, 열수 추출물을 최종 에탄올 농도가 80%가 되도록 에탄올로 처리한 후, 원심분리하여 침전물을 얻고, 침전물을 투석하고 투석물을 최종 에탄올 농도가 60%가 되도록 에탄올로 처리한 후 원심분리하여 상층액을 얻고, 상층액을 음이온 교환 크로마토그라피로 정제하는 것을 포함하는, 항암 면역활성 다당류의 제조방법.

6. 제5항에 있어서, 상기 열수 추출시 균사체를 실온 내지 100℃의 증류수 중에서 3 내지 24시간 동안 추출하는 방법.

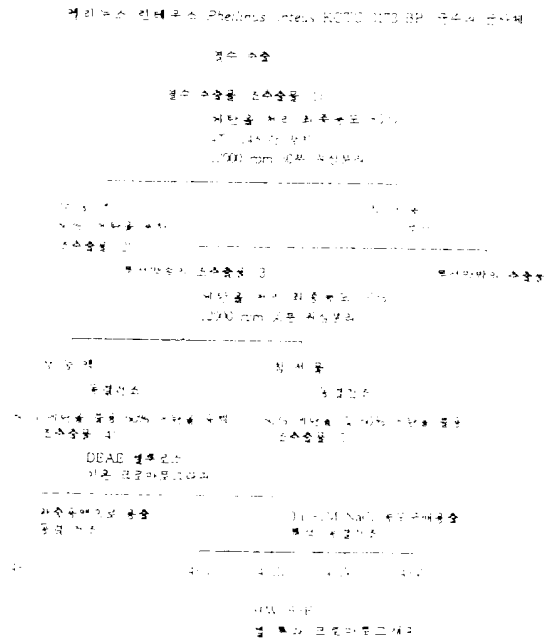
7. 제1항 내지 제4항 중 어느 한 항의 항암 면역활성 다당류를 유효성분으로 포함하는 약학적 조성물.

※ 참고사항 : 최초출원 내용에 의하여 공개하는 것임.

도면의 간단한 설명

제1도는 펠리누스 린테우스 균주로부터 항암 면역활성 다당류를 정제하는 과정을 도식화한 것이고, 제2도는 조추출물(4)의 DEAE-셀룰로즈 크로마토그라피 결과를 나타낸 것이고, 제3도는 활성물질 4-Ⅲ의 겔 투과 크로마토그라피 결과를 나타낸 것이다.

제 1 도



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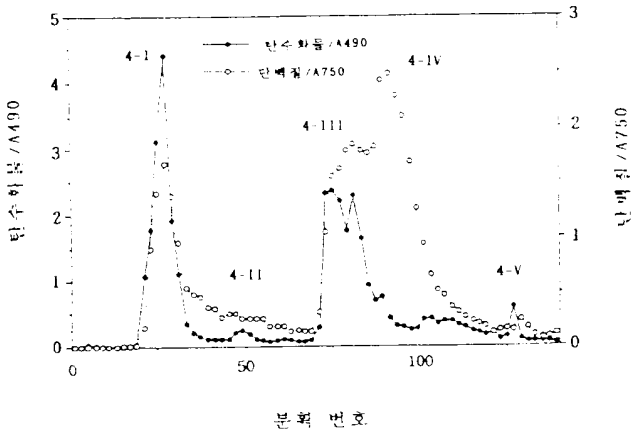
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단백질/A750
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4-II
4-III
4-IV
4-V
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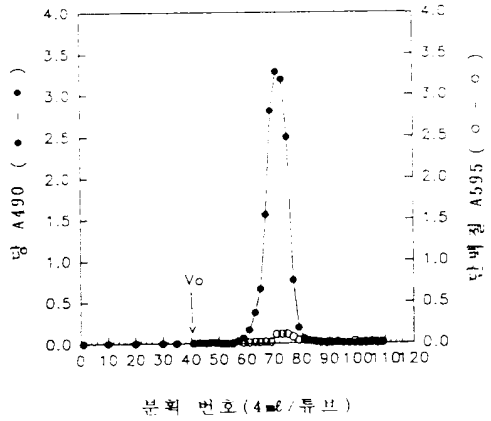
단백질/A750
분획 번호

제 3 도


당 A490 (• - •)
단백질 A595 (○ - ○)
Vo
분획 번호 (4㎖/튜브)

PTO 2002-1936

Korea, Laid-open
97-15743

ANTI-CANCER IMMUNOLOGICALLY ACTIVATED POLYSACCHARIDE SEPARATED FROM PHELLINUS LINTEUS AND ITS MANUFACTURING METHOD

[Phellinus linteus Ro Buteo Bunridoin Hangam Myeonyeok Whalsung Tadangryu Mip Iui Jaezo Bangbeop]

Ik-Dong Yu, Kyung-Shik Song, Jae-Hoon Lee, Soo-Muk Cho, Hwan-Muk Kim, Kyung-Soo Koh, and Man-Woo Han

UNITED STATES PATENT AND TRADEMARK OFFICE
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Applicants	:	Korea Institute of Science and Technology Korea Shinyak Co., Ltd.
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English Title	:	ANTI-CANCER IMMUNOLOGICALLY ACTIVATED POLYSACCHARIDE SEPARATED FROM PHELLINUS LINTEUS AND ITS MANUFACTURING METHOD

Abstract /1*

The present invention pertains to an anti-cancer immunologically activated polysaccharide with a molecular weight of 9,000-16,000 or 153,000 dalton separated from a mycelium of Phellinus linteus KCTC 0173BP, a method for manufacturing the above-mentioned polysaccharide including a hydrothermal extraction from the mycelium of the above-mentioned strain, ethanol extraction, and separation and purification by anion exchange chromatography, etc., and a pharmaceutical composition containing the above-mentioned polysaccharide as an active ingredient.

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*Numbers in the margin indicate pagination in the foreign text.

1. Title of the Invention: ANTI-CANCER IMMUNOLOGICALLY ACTIVATED POLYSACCHARIDE SEPARATED FROM PHELLINUS LINTEUS AND ITS MANUFACTURING METHOD

2. Claims

1. An anti-cancer immunologically activated polysaccharide characterized by being separated and purified from a mycelium of Phellinus linteus KCTC 0173BP strain.

2. The anti-cancer immunologically activated polysaccharide of Claim 1 characterized by the fact that the molecular weight is 9,000-16,000 dalton.

3. The anti-cancer immunologically activated polysaccharide of Claim 1 characterized by the fact that the molecular weight is 153,000 dalton.

4. The anti-cancer immunologically activated polysaccharide of Claim 1 characterized by the fact that the sugar component of the above-mentioned polysaccharide is composed of 5-55 mol% glucose, 5-30 mol% galactose, 10-50 mol% mannose, 1-25 mol% gyrose, and 5-25 mol% arabinose.

5. A method for manufacturing an anti-cancer immunologically activated polysaccharide characterized by that a mycelium of Phellinus linteus KCTC 0173BP strain is hydrothermally extracted; the

hydrothermal extract is treated with ethanol so that the final ethanol concentration may be 80% and is then centrifuged, so that a precipitate is obtained; the precipitate is dialyzed; the dialysate is treated with ethanol so that the final ethanol concentration may be 60% and is then centrifuged, so that a supernatant is obtained; and the supernatant is purified by an anion exchange chromatography.

6. The method of Claim 5 characterized by the fact that in the above-mentioned hydrothermal extraction, the mycelium is extracted for 3-24 h in distilled water at room temperature to 100°C.

7. A pharmaceutical composition, characterized by including the anti-cancer immunologically activated polysaccharide of any of Claims 1-4 as an active ingredient.

* Remarks: Initially disclosed according to the initial filing.

3. Brief description of the figures

Figure 1 is a diagram showing a process for purifying the anti-cancer immunologically activated polysaccharide from Phellinus linteus strain. Figure 2 shows the results of a DEAE-cellulose chromatography of a coarse extract (4). Figure 3 shows the results of a gel permeation chromatography of an activator 4-III.

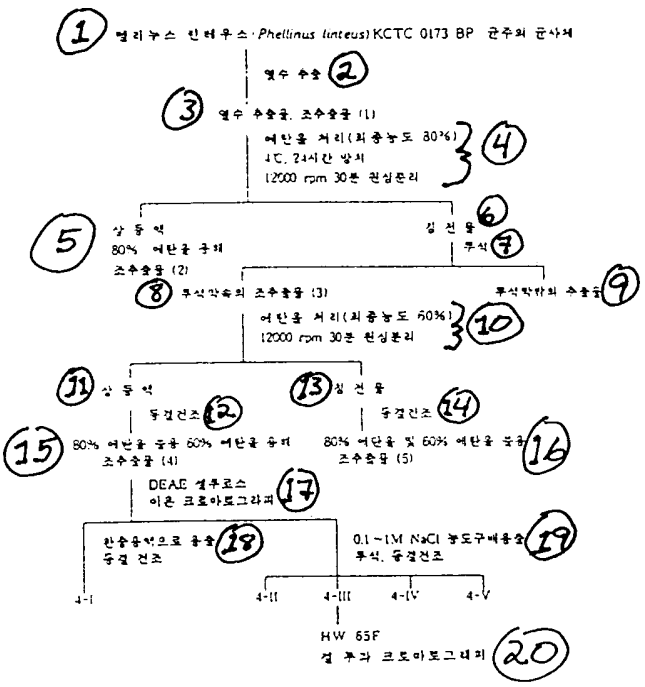

Figure 1:

1. Mycelium of Phellinus linteus strain KCTC 0173BP
2. Hydrothermal extraction
3. Hydrothermal extract, coarse extract (1)
4. Ethanol treatment (final concentration 80%)

   Holding at 4°C for 24 h

   Centrifuging at 12,000 rpm for 30 min
5. Supernatant

   80% ethanol dissolved

   Coarse extract (2)
6. Precipitate
7. Dialysis

8. Coarse extract (3) of dialysis membrane inside

9. Extract of dialysis membrane outside

10. Ethanol treatment (final concentration 60%)

    Centrifuging at 12,000 rpm for 30 min

11. Supernatant

12. Freeze-drying

13. Precipitate

14. Freeze-drying

15. 80% ethanol undissolved, 60% ethanol dissolved

    Coarse extract (4)

16. 80% ethanol and 60% ethanol undissolved

    Coarse extract (5)

17. DEAE cellulose

    Ion chromatography

18. Elution with a buffer solution

    Freeze-drying

19. 0.1-1 M NaCl concentration gradient elution

    Dialysis, freeze-drying

20. HW 65F

    Gel permeation chromatography

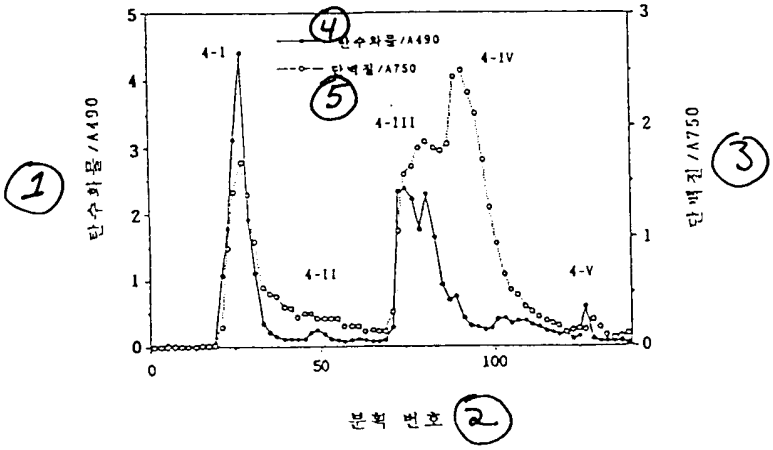

Figure 2:

1. Carbohydrate/A490
2. Fraction No.
3. Protein/A750
4. Carbohydrate/A490
5. Protein/A750

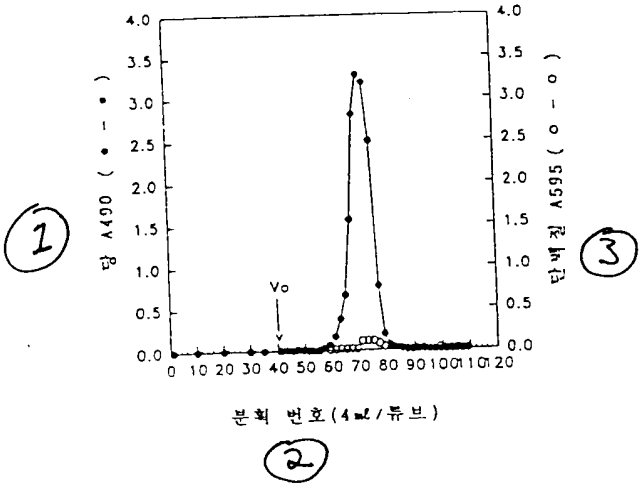

Figure 3:

1. Sugar A490
2. Fraction No. (4 ml/tube)
3. Protein A595